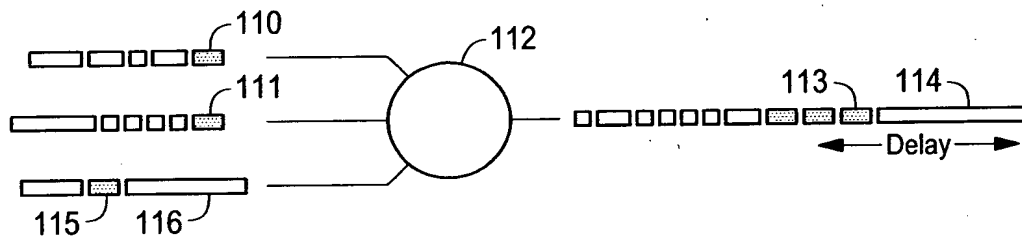**FIG. 1**

STANDARD

FIG. 2A

PRIORITY-BASED

FIG. 2B

SCHEDULE_BASED

FIG. 2C

Internet Packet Telephone (10)

SS7 Link (16)

TDM (18)

Wide Area Telephone Interface (13)

Scheduling Packet Switch (9)

Scheduling Computer Application (7)
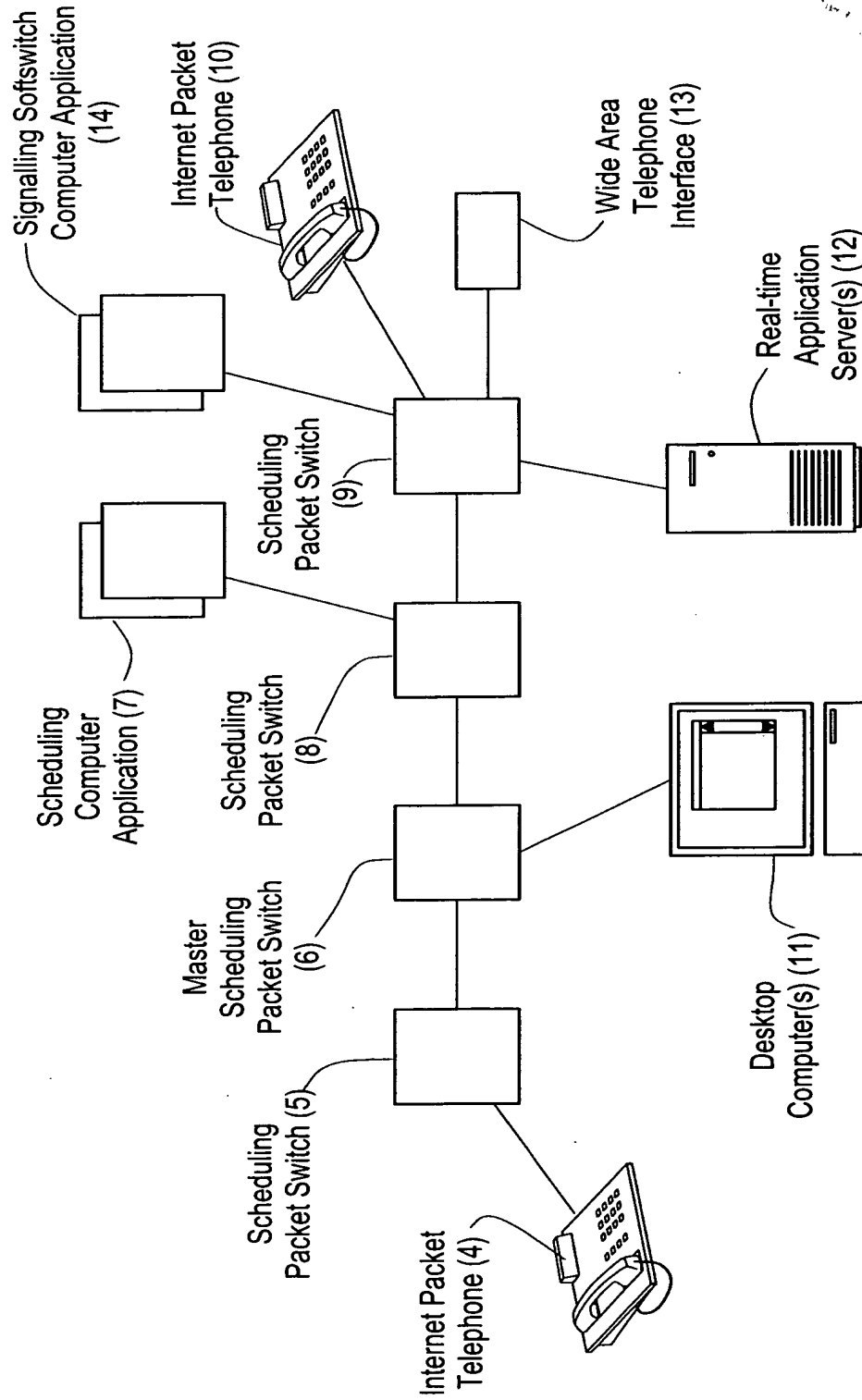
Scheduling Packet Switch (8)

Real-time Application Server(s) (12)

Master Scheduling Packet Switch (6)

Desktop Computer(s) (11)

Scheduling Packet Switch (5)

Internet Packet Telephone (4)

Network of Scheduled Switches

FIG. 3

Signalling Softswitch
Computer Application
(14)

Internet Packet
Telephone (10)

Wide Area
Telephone
Interface (13)

Scheduling
Computer
Application (7)

Scheduling
Packet Switch
(9)

Scheduling
Packet Switch
(8)

Real-time
Application
Server(s) (12)

Master
Scheduling
Packet Switch
(6)

Desktop
Computer(s) (11)

Scheduling
Packet Switch (5)

Internet Packet
Telephone (4)

FIG. 4

Network of Scheduled Switches with Signalling Softswitch

HEARTBEAT
PACKET
(180)

181

SCHEDULE INTERVAL

182

ETHERNET HEADER 183

IP HEADER 184

ADMIN DATA PAYLOAD 185

REFERENCE BYTE 186

IP END 187

ETHERNET END 188

HEARTBEAT PACKET
FORMAT 189
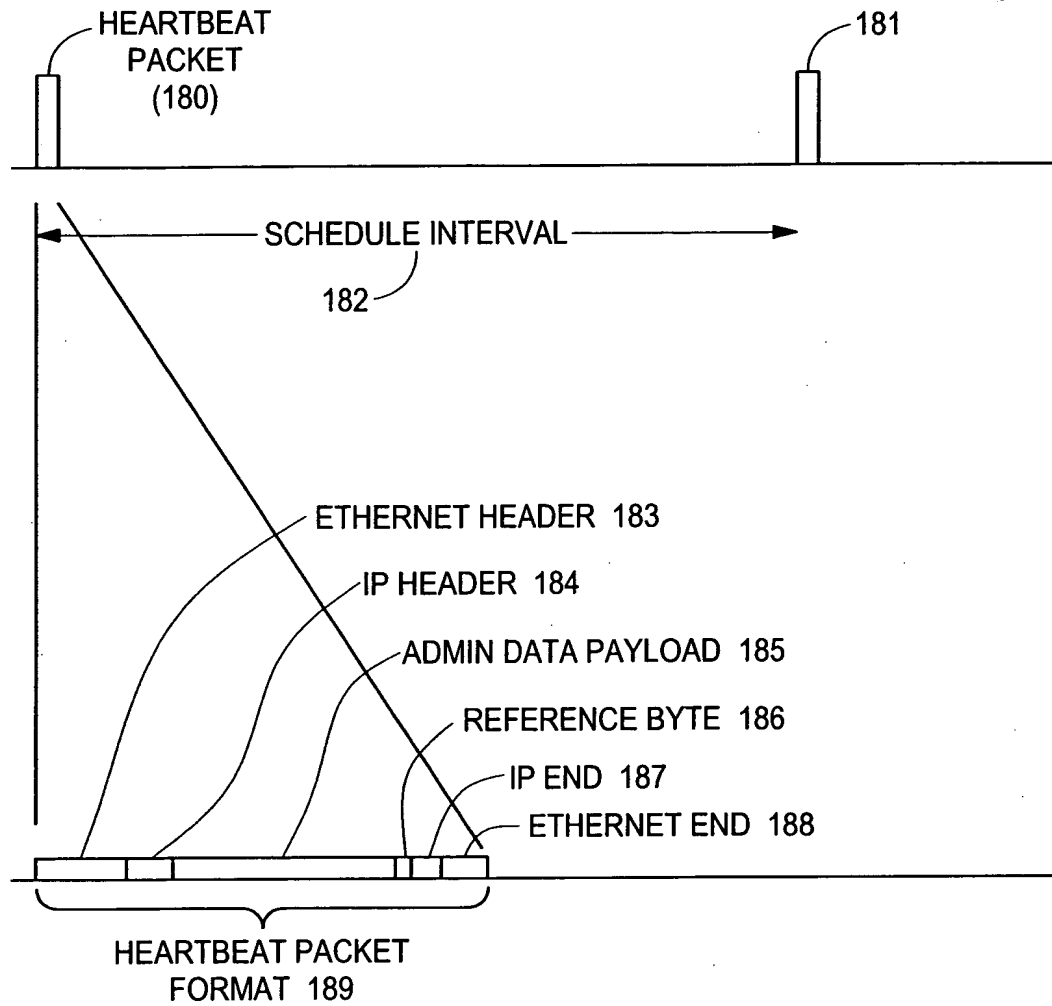
HEARTBEAT PACKET STRUCTURE

FIG. 5

Schedule
Server

SMC

200
SesReq1

202

SesReqAck1

204
SesReq2

206

SesReqAck2

208
Call or Real-time Session in Progress

210
SesRel1

212

SesRelAck1

214
SesRel2

216

SesRelAck2
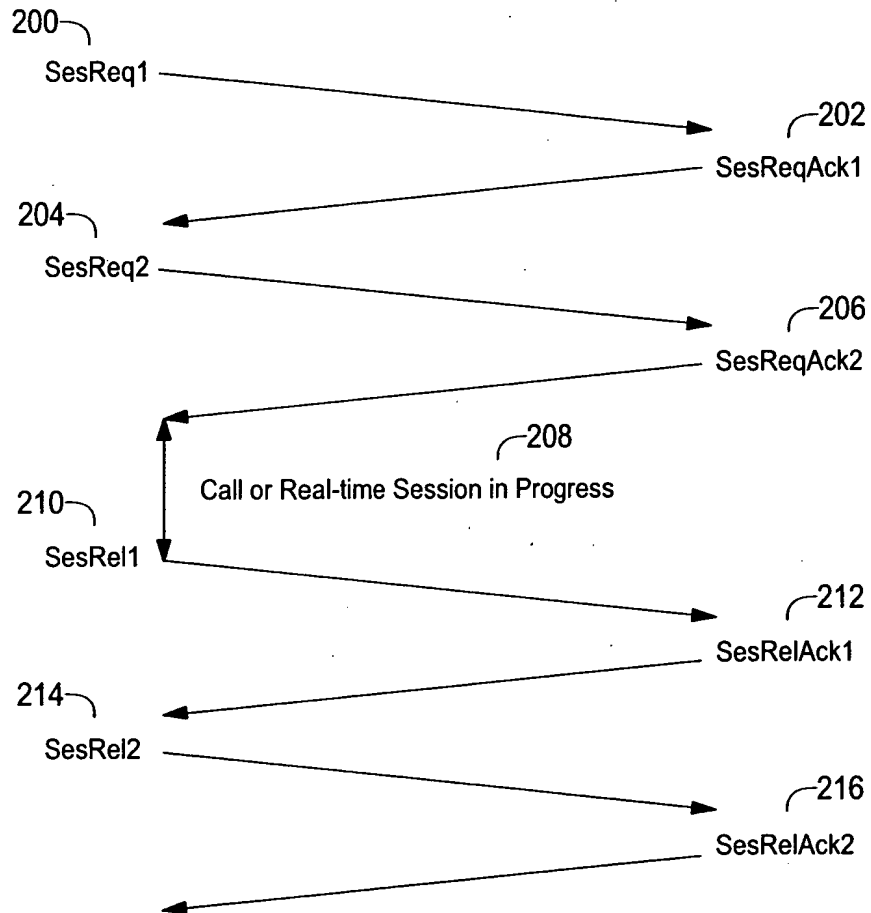
Protocol Messages for a
Bi-directional Real-time Session
Establishment and Termination

FIG. 6

FIG. 7

FIG. 8

NETWORK PROCESSOR-BASED SCHEDULE PACKET SWITCH
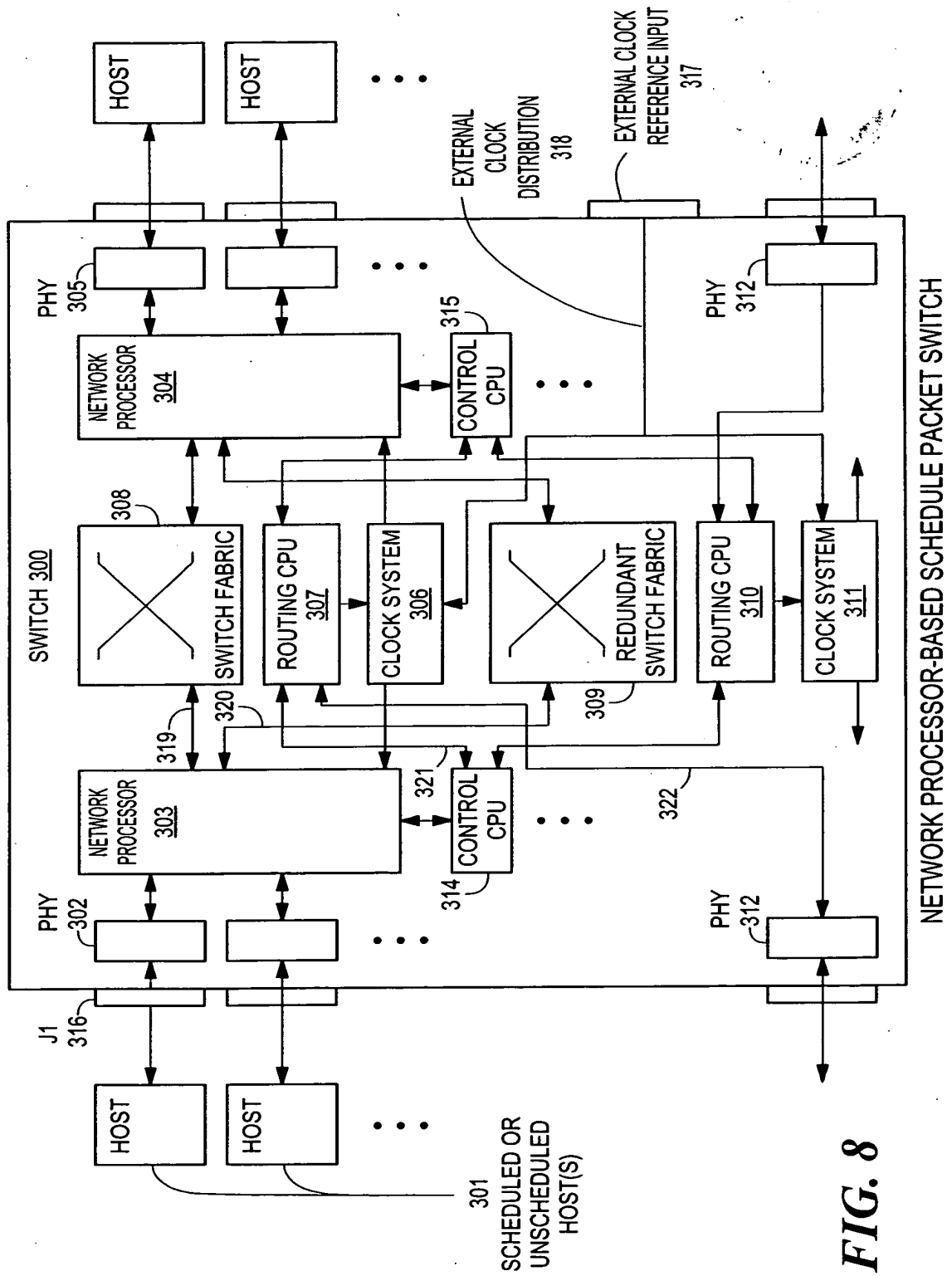
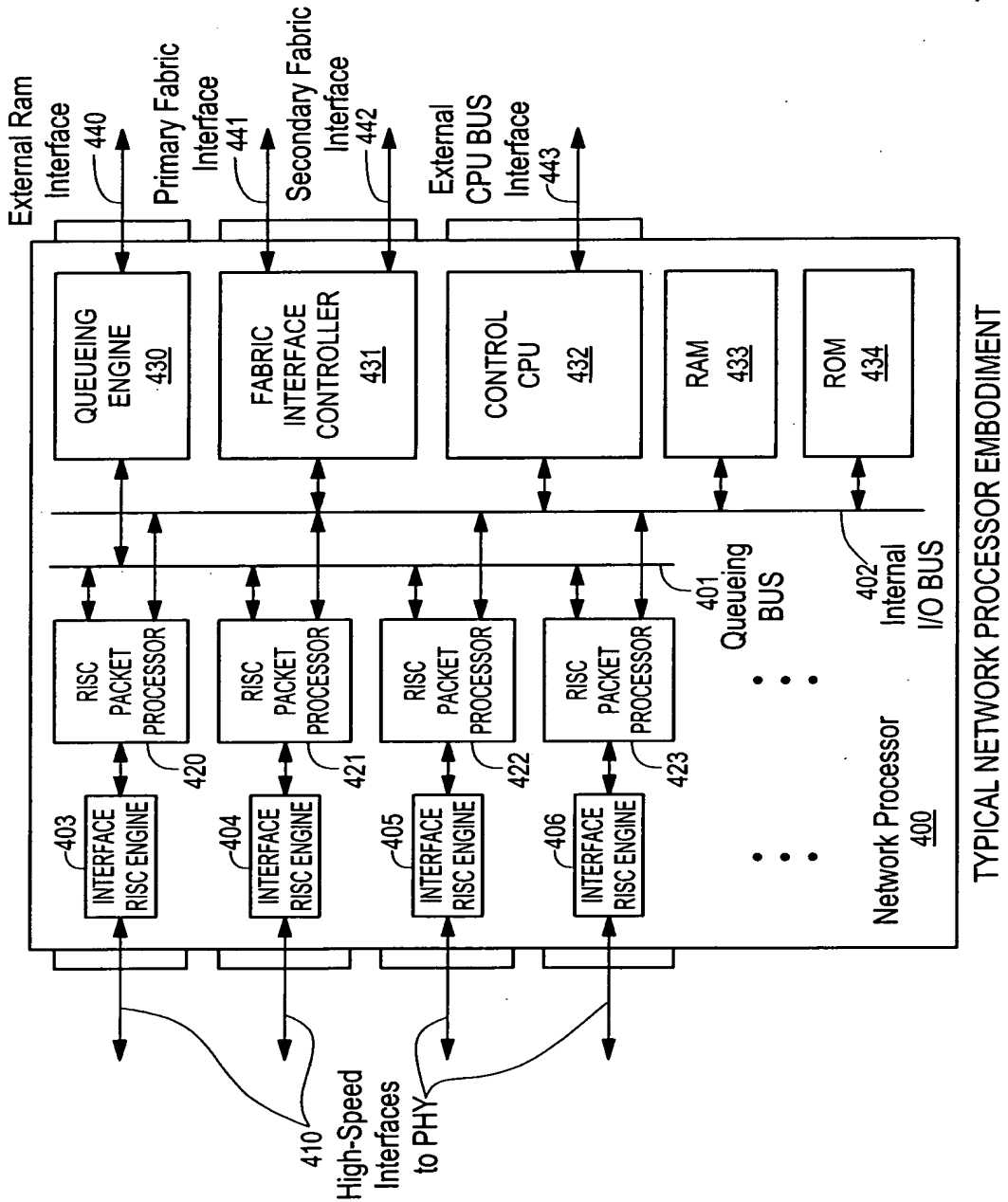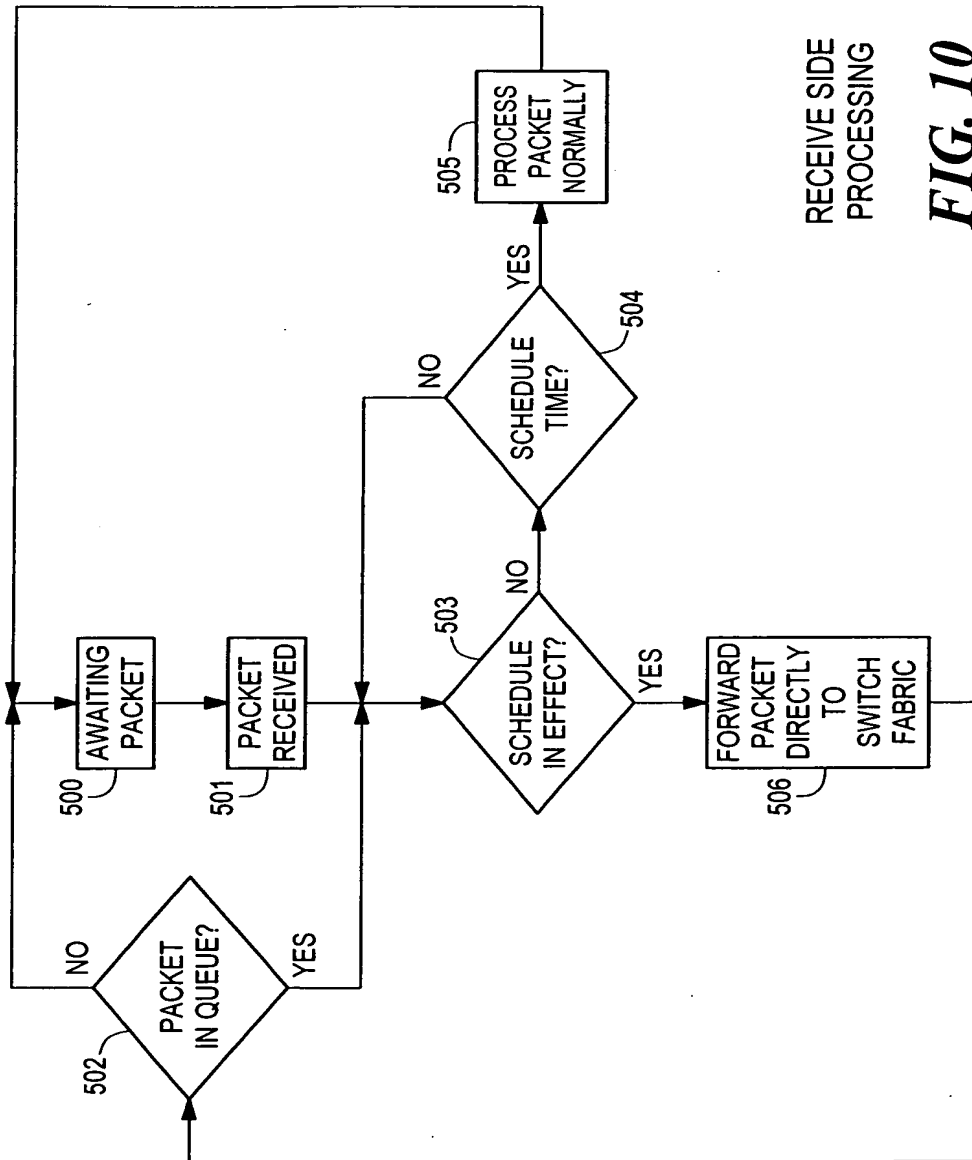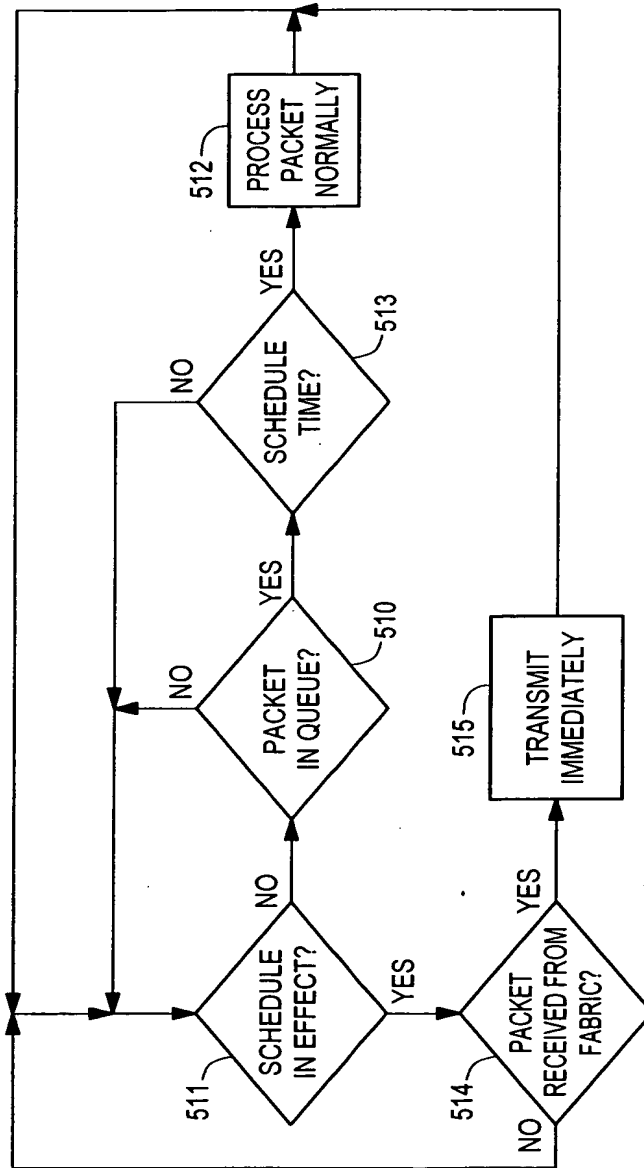TYPICAL NETWORK PROCESSOR EMBODIMENT
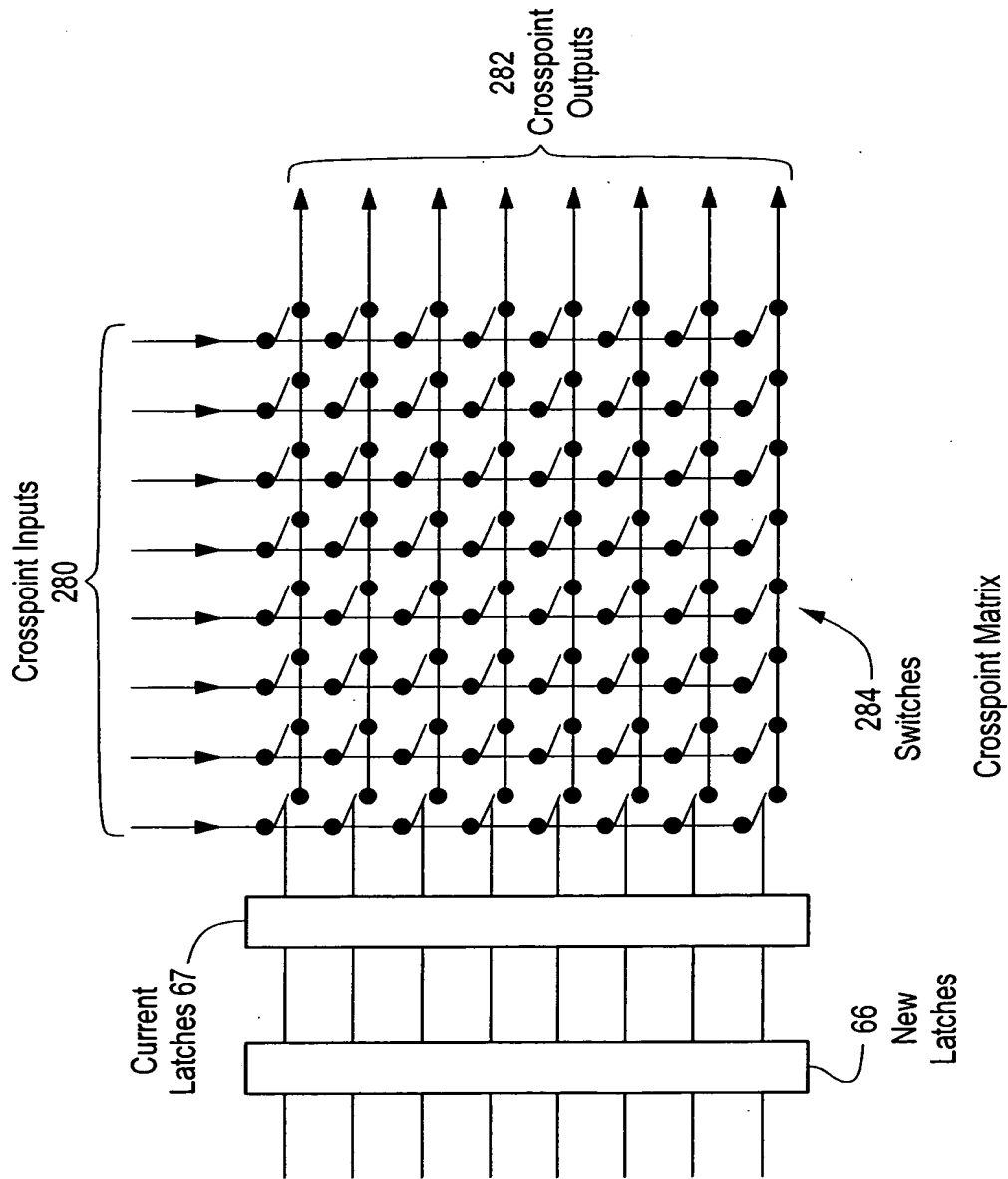
FIG. 9

RECEIVE SIDE
PROCESSING

FIG. 10

TRANMIT SIDE
PROCESSING

FIG. 11